

the country by persons who make this a regular business. More unsound meat, according to the inspectors, is found in Newgate than in any other market, solely because more country meat is sent there. But there are persons well known in the London trade, who make it their business to dispose privately of meat which could not be exposed openly in any market.

"As for the distribution of this meat, there is no doubt that it is purchased after regular market hours, by tradesmen who retail it to the labouring classes late in the evening, in the suburbs of what are called low neighbourhoods. Much meat is sold by gaslight which could scarcely be exposed in broad daylight.

"*Illness produced by it.*—We must now touch upon the important subject of the ill-effects of unsound meat. These are twofold. In the first place, the consumer is robbed of his fair share of nourishment; for it is notorious that second-rate and unsound meat cannot stand the fire, and wastes in cooking to an extraordinary degree. Thus it is the most extravagant kind of food, and furnishes one example among the many, that the poorest people always pay most dearly for everything.

"In the next place, there can be no doubt but that the use of diseased meat may be a specific cause of illness. We need scarcely remind you that the eating of measly pork, and of ill-cooked animal food in general, is notoriously a cause of tapeworm, and of various forms of hydatid that infest the human subject. Instances have come under the notice of Dr. Gibbon, Dr. Challice, and other members of the committee, of symptoms of poisoning arising from the use of unsound meat partially cooked. It appears to be almost established that, in most cases, prolonged boiling deprives it of any active poisonous properties; and it is said that the flesh of glandered horses, after being boiled, can be handled and eaten with impunity; but roasting and frying are far less efficient means of subjecting flesh thoroughly to the purifying influence of heat.

"We may allude in passing to the overfed condition in which cattle are commonly killed at Christmas. Dr. Druitt has seen several instances of illness from eating that kind of meat, but it is matter of gratification that excessive and unnatural fattness seems now to be less cultivated by breeders of cattle.

"Your committee may observe that, although it may be difficult to prove it by actual cases, they have no doubt that unwholesome meat is one cause among many, of the debility and cachexies, the poverty of blood and intractable maladies of the poor who flock to the dispensaries and parochial medical officers, and especially of diarrhoea during hot weather.

"But your committee feel that it is a question which must be argued on far higher ground than that of special ill consequences. They believe that public decency demands that a stop be put, as far as possible, to the sale of the flesh of diseased animals, and of those which have died a natural death. They appeal to that highest and best sanitary code contained in the law of Moses (Leviticus, xi. 39, and xviii. 15), which they would willingly see observed at the present day."—*Med. Times and Gaz.*, Aug. 30, 1856.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

62. *Case of Poisoning by Chloroform taken internally.* By JAMES SPENCE, Esq.—On the 19th of May last, at a quarter past ten P. M., I was called to see A. B—, aged twenty-one, one of the female servants of this hospital, who, I was informed, had twenty minutes previously swallowed two ounces of pure chloroform. I found her lying in bed, half dressed, in a state of perfect unconsciousness (apparently in a profound sleep), from which she could not be roused. Her breath did not smell of chloroform. Pupils very much contracted; conjunctiva quite insensible; body of normal temperature; respiration tranquil and regular; pulse 78, soft and tolerably full; no congestion of face. I immediately ordered sinapisms to be applied to the extremities and over the epigastrium, and,

having secured the able assistance of my colleague, Dr. Thorburn, proceeded to evacuate the stomach by the stomach-pump, it being impossible to make her swallow an emetic. A delay of nearly ten minutes occurred before the stomach-pump was procured. When it was applied, the matters evacuated had not the slightest odour of chloroform, nor of opium, which was suspected from the excessively contracted state of the pupils. About half an ounce of mustard was introduced into the stomach, which was again emptied, and then a drachm of aromatic spirit of ammonia, with one ounce of brandy, administered by means of the stomach-pump. Some feeble attempts at vomiting ensued, and the pupils became fully dilated, and continued so for some minutes, but still continued quite immovable when exposed to a strong light. At the same time the beats of the pulse and number of respirations slightly increased in frequency, but shortly after fell below their previous standard. A powerfully stimulating enema was now administered, and, after the lapse of ten minutes, respiration becoming slow and stertorous, the pulse at the same time sensibly flagging, and the face becoming livid and congested, galvanism was resorted to, a free circulation of air being kept up around the patient, and her tongue held forward by a pair of catch forceps to prevent closure of the glottis. The number of respirations, however, continued to decrease, falling so low as seven in the minute, and, accordingly, an additional pair of plates were added to the galvanic battery, greatly increasing its strength and efficiency, while enemata of beef-tea and brandy were administered frequently. Dr. William Gairdner, one of the visiting physicians to the hospital, had been sent for, and arrived about twenty minutes past eleven, P. M. He recommended the administration of a large black draught, which was done by means of the stomach-pump. This produced severe retching and attempts to vomit, during which the patient was repeatedly almost asphyxiated. Keeping up artificial respiration with the aid of galvanism was now evidently our only resource, and this was continued, with occasional short intermissions, for nearly two hours. Stimulating enemata were given every half hour, and warmth applied to the extremities, which became excessively cold. Everything, however, appeared of no avail, and respiration fell to two per minute; the pulse at the wrist became imperceptible, while the face and neck were perfectly livid. At one time, indeed, breathing ceased altogether for nearly two minutes, and the jaw fell. The remedial measures were, however, persevered in, and in about half an hour we had the gratification of perceiving some signs of amendment. Her pulse gradually gained in strength, while her breathing became less embarrassed, *her breath now smelling strongly of chloroform.*—Half-past two P. M. Pupils became widely dilated, the sensibility of the conjunctiva returning, and the lividity of the face disappeared. Galvanism was now desisted from, although the patient still remained unconscious, all attempts to rouse her being unavailing.—Three A. M. Bowels very freely purged; pulse 94, gaining strength; respiration 28 per minute; the extremities have recovered their natural temperature.—Half-past three A. M. Consciousness slowly returning.—Four A. M. For the first time the patient answered when addressed, and of her own accord opened her eyes. The white of egg beat up with mucilage and warm milk was now cautiously administered, and attendants were directed to watch her carefully.

May 20th.—Ten A. M. Perfectly sensible; pulse 100, soft; respiration unembarrassed, and not hurried in any marked degree; complains of general pain in abdomen, of thirst, and great nausea; tongue moist, but is considerably swollen and very painful. Hot fomentations applied over abdomen, and she was ordered to have five minims of tincture of opium, every three hours, in half an ounce of mucilage. Has not passed any urine since last night; bladder empty.—Evening. Tongue moist, and still extremely painful; pulse 120, soft and regular; general pain over abdomen; has been severely purged, and a considerable quantity of blood passed by stool; urine passed freely; complains of a dull aching pain across the loins. To continue the fomentations, have a starch enema containing half a drachm of tincture of opium, and to swallow pieces of ice occasionally.

21st.—No return of the diarrhoea; slept a little during the night; pulse 132, soft; tongue furred; thirst excessive; pain is now entirely referred to the epi-

gastrium, and is increased by pressure, which also induced a tendency to vomit; feels drowsy, and pupils are slightly contracted; urine passed abundantly. To apply twelve leeches to the epigastrium and a sinapism along the spine.—Evening. Much relieved; pulse 130; tongue moist; less drowsy, and free from nausea; diarrhoea has recurred, but not severely. To repeat the starch and opium enema.

22d.—Greatly better; pulse 100; complains merely of a general feeling of soreness; has taken a little beef-tea, which was retained in the stomach.

23d.—Doing well; pulse 90, soft.

25th.—Is able to sit up, and the following day returned to her work.

I have communicated the particulars of this case from its great interest, being, as far as I am aware, the only one on record of poisoning by chloroform administered internally. The only other case I know of its occurrence happened also in this hospital, some years ago, when a patient, having surreptitiously got possession of a bottle of chloroform, swallowed (if I remember rightly) the enormous quantity of six ounces. The man recovered from the immediate effects of the poison under the use of stimuli and galvanism, but died in great agony, within forty-eight hours, with symptoms of acute gastritis. When first called to the present case, I should certainly have thought it a case of poisoning from opium had I not been shown the bottle which had contained the chloroform, the contracted state of the pupils, coupled with the patient's complete insensibility, strongly resembling the effects produced by the former drug. The diminution of the frequency of respiration, however, was not proportionate to the amount of stupor. The indications for treatment were evidently to sustain the flagging vital power by stimulants and galvanism; but I am doubtful of the propriety in such cases of administering alcoholic stimuli, which might tend to aggravate the symptoms; and, should I ever meet with a similar case, I should trust more to the preparations of ammonia, as we are, I think, justified in supposing that chloroform, to a certain extent at least, acts by causing an excess of carbon in the blood, which would be still further increased by the administration of any form of alcohol. In fact, the patient's condition was precisely that of extreme drunkenness. It is worthy of notice that, although certainly not more than forty minutes elapsed from the time the chloroform was swallowed till the stomach was evacuated by the stomach-pump, no smell of chloroform was appreciable in the contents of the stomach. This could have arisen only from extremely rapid absorption of the poison, or from its having quickly passed into the small intestines, and been thence absorbed more gradually. The latter supposition is favoured by the fact that a strong odour of chloroform was perceived in the patient's breath when she began to rally from its effects, nearly four hours subsequently to its administration, although it could not be detected before. It was from a consideration of this kind that Dr. Gairdner prescribed an active cathartic, in hopes of emptying the intestines of their noxious contents. It is still a disputed point whether the action of chloroform on the nervous centres affects primarily the respiratory or circulatory systems. The former is maintained by Mr. Bickersteth, of Liverpool, who has supported his arguments by several interesting and carefully conducted experiments, while, in the case of death from inhalation of chloroform recorded by Dr. Dunsmure, the heart appeared to cease to beat before the respiratory movements were suspended; and a similar observation was made in the case lately published by Dr. Mackenzie, of Kelso. In the case before us, the heart and lungs seemed to flag *pari passu*—certainly the radial pulse disappeared before respiration was entirely arrested, but unfortunately at the moment it was not observed if the heart had likewise stopped.

The successful result of this case may serve to encourage medical men to persevere, even against hope, under similar circumstances, in continuing their exertions. Mr. Lowe, two or three years ago, published a case of inhalation in which respiration and the heart's action were arrested for fully four minutes when under continued artificial respiration; the pulse first slowly reappeared, followed by a return of the natural respiratory movements.

In cases, however, where chloroform has been swallowed, it is not only the immediate effects of the drug that we have to fear, and this is well exemplified

in the instance of the patient already quoted, who died from the subsequent inflammation set up. Fortunately, in the present case, the symptoms of the secondary danger were never very severe, and were easily controlled by mild remedies.—*Lancet*, Aug. 9th, 1856.

63. *Symptoms and Post-mortem appearances produced by Poisonous Doses of Strychnia.*—Drs. LAWRIE and COWAN read before the Medico-Chirurgical Society of Glasgow (June 10th, 1856) a very interesting account of a case of poisoning by strychnia, and the results of experiments which they had made on inferior animals, with a view of determining the symptoms and post-mortem appearances produced by poisonous doses of that drug. (See *Glasgow Medical Journal*, July, 1856, p. 162.)

As the subject is one which has lately given rise to much discussion, we shall give from the report of the proceedings of the meeting (*Glasgow Med. Journ.*, July, 1856, p. 233 *et seq.*) the principal points of interest in the paper, with some of the remarks of the various speakers.

Dr. Lawrie stated that although the chemical detection of strychnine formed no part of their inquiry, that department of the subject had not been altogether neglected. They had sent two dogs to Dr. Anderson and one to Dr. Penny, each poisoned with a quarter of a grain of strychnine, and, in all of the stomachs, the most unequivocal evidence of the presence of strychnine was afforded by all of the tests employed. Dr. Anderson found traces of it in three of the livers.¹ Dr. Easton had kindly examined urine voided by one of the dogs while under the influence of chloroform, and had, with the greatest care and certainty, discovered the presence of strychnine. This was a most important fact in several points of view; it showed the great advantage to be derived from examining this excretion in all cases of poisoning by strychnine. It further showed the most probable manner in which chloroform arrests the action of strychnine. It occurred to us that this interesting fact might depend on the inhalation of chloroform suspending the absorption of the strychnine, and, if so, it would not be found in the excretions. Dr. Easton's experiment upsets this theory, and makes it probable that the effects of the two poisons are physiologically antagonistic, and that the action of chloroform, being the more powerful, keeps the strychnine at bay so long as the effects of the inhalation continue. It also encourages the hope that if the inhalation were persisted in for a sufficiently long period, the strychnine might be entirely eliminated without exhibiting even its mildest physiological effects.

The diagnosis of strychnine poisoning and tetanus is a subject of great importance. Before the present inquiry was commenced, he (Dr. L.) had little doubt that the state of the jaw would be in a great measure diagnostic. The results of their experiments had confirmed this suspicion; for although it was true that, during the violence of the paroxysm, the jaw is spasmodically, even firmly closed, the moment relaxation occurs it can be easily and widely opened. Indeed, the animal generally lies with it open. This is not the case with tetanus. The horse that got 58 grains of strychnine illustrated this fact admirably. After 48 grains had been exhibited, and while he was powerfully under their influence, his mouth was widely opened, his tongue laid hold of, and ten grains in solution were, with the greatest ease, poured over his throat from a common beer bottle. In no case of tetanus that he had seen could this have possibly been done. It so happened that he had that day seen two cases which illustrated still further this subject. The one was a case of traumatic tetanus in a man aged fifty, the other of idiopathic opisthotonos in an infant. His mind being full of the subject, he had carefully made the following observations. The muscles of the jaw, neck, and upper part of the back of the tetanic patient were, as they have always in his experience been found in tetanus, while those of the limbs were perfectly quiescent and obedient to the will. A sudden touch on the face or any part of the body produced no spasm. The risus sar-

¹ Since the meeting of the society, Dr. Penny has most kindly examined for me, with great care, the brain and spine of a dog poisoned with strychnine, and has failed to discover the poison.—*J. A. L.*